

# COST *and* MANAGEMENT

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THE CANADIAN SOCIETY OF

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# EDITORIAL

## Are Guaranteed Annual Wages Possible?

It is becoming quite apparent that the next target of organized labour is the guaranteed annual wage and already many attempts have been made to have this feature incorporated into labour contracts. It would, therefore, be well for accountants to look into the various aspects of the guaranteed annual wage and to understand or ascertain to what extent it is possible and if not possible, why.

Just what is meant by a guaranteed annual wage is not quite clear since the term has been applied to many plans which in effect guarantee very little, and where guarantees are in effect, they only apply under certain conditions. If we assume, as the term implies, that a guaranteed annual wage plan constitutes a guarantee on the part of the employer that the employee will be paid a stipulated minimum wage for fifty-two consecutive weeks providing that the employee is willing and able to work, then we are approaching what labour unions have in mind. There is, of course, no denying the fact that if it were possible to institute and maintain a plan of guaranteed annual wages, it would be highly desirable to do so. The advantages are quite obvious. Workers would be more satisfied and contented, resulting in improved industrial relations and reduction in labour turnover. Consumer demand would be more consistent making it possible to plan larger and more efficient production runs. The worker who is fortified with a feeling of security will spend his income more freely while he is employed.

Any discussion on the question of annual wages must eventually resolve itself around the problem of providing a continuous source of funds from which to meet the demands of guaranteed wages. It would indeed be hard to find a company with sufficient cash reserves to continue payment of normal wages to its employees over a protracted period of unemployment. Furthermore, it would also be hard to find a company whose margin of profit would make it possible to build up such a reserve even though the expense incurred were allowable as a charge against profits for purposes of income tax. On this point alone we might say that the guaranteed annual wage plan is quite impossible but history has taught us that this is a dangerous admission to make for there are many instances where the impossible has been made possible to the betterment of employers and employees and consequently to society as a whole.

Of this much we may be certain. No company can be expected to incorporate an annual wage agreement into their labour contract knowing that it would be impossible to meet their contractual obligations if they should run into an unexpected and protracted period of unemployment as has recently been occasioned by shortages of material. If an annual wage plan is going to be developed at all, it must be predicated upon the assumption that adequate reserves are going to be built up on a sound

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actuarial basis. This would be quite possible in certain industries such as public utilities where there is relatively little unemployment. In such cases, however, the guaranteed annual wage is not of such great importance. Over the past fifteen years many companies have devised plans of guaranteed wages or guaranteed employment but those plans which have been successful have been pretty well confined to the consumer goods and service industries and even in these cases, the guarantees are quite flexible.

Assuming then that there may be scope for a form of guaranteed wage in the consumer goods and service industries, just what would be the possibilities in Canada. Assuming that about 30% of the workers are employed in industries or hold positions where there is very little fluctuation in employment (and this would include approximately 115,000 government employees), this would mean that there are 1½ million workers employed in those industries where instability has so far formed an insurmountable object to any plan of guaranteed wages. We should bear in mind, however, that the problem of stabilizing production has not by any means received all the consideration that should be given, and the greater number of employers who can solve this problem to the extent that they can safely institute a guaranteed wage, the greater effect there will be on a more stable consumer demand. Any results achieved in this respect have a chain effect extending into other industries.

Briefly, the chief problems which must be considered may be enumerated as follows:

1. To what extent are wages to be guaranteed.
2. To what extent can the sales curves be flattened out.
3. How secure is the export market.
4. Can merchandising methods be changed to produce for inventories

rather than for the market.

There are those who argue that we must solve the problem of full employment before we can entertain the idea of a guaranteed annual wage. As to which plan must first be devised is as problematical as which came first the hen or the egg. There is also the other contentious argument concerning the allocation of the cost of providing for unemployment—is it a cost of production or is it a cost of social welfare to be covered by taxation. It was not so long ago that such welfare expenses as pensions, sickness and accident insurance, and life insurance were considered to be in the latter category but are now almost universally considered to be a cost of doing business just the same as depreciation and maintenance of equipment. So too, the same argument might be extended by saying that since we include in our costs the expense of carrying equipment which is not utilized to the full extent of its capacity, therefore, provision should also be made for possible unused man-hours.

The purpose of this editorial is only to present some aspects of the guaranteed annual wage problem, for we may expect considerable pressure on the part of organized labour for guaranteed annual wages in anticipation of a business slump. Too often have employers resented proposals by labour just on general principles. It is the duty of the accountant as an advisor to management to investigate the financial aspects of these proposals and arrive at the logical conclusion in the light of present circumstances and future possibilities. If an annual wage plan is possible, employers

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will benefit ultimately just as much as the employees and, therefore, should receive their earnest consideration. Do not wait until it becomes a forced issue. There is no plan which covers all firms, each one must be tailor-made and this will require plenty of time. Any suggestions or comments from the members concerning this timely subject, we will be most appreciated.

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## Annual Meeting

The Annual Meeting this year will be held in Fort William on July 3rd, 4th and 5th and the Fort William-Port Arthur Chapter will be our hosts. Elsewhere in this issue appears the programme and it will be seen that there is much of interest for those who can find it possible to attend. We are particularly fortunate in having as our special speaker at the Annual Dinner, The Honourable C. D. Howe, Minister of Reconstruction. In addition to the Directors Meetings and the Annual General Meeting, there will be two technical sessions on the theme of "Inventory Valuations." For the moments of relaxation, the Fort William-Port Arthur Chapter have arranged to show with pardonable pride some of the scenic wonders in and around the Twin Cities. A special programme, of course, has been arranged for the ladies.

The selection of these dates has imposed considerable hardship upon the members of the Fort William-Port Arthur Chapter since accommodation at that particular time is at a premium. The members are, therefore, requested to co-operate in communicating with the office of the Secretary-Manager as soon as possible for accommodation. Members from Quebec and Ontario are proceeding to the Twin Cities by boat and from the number who have already made reservations this promises to be a most enjoyable trip.

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## New Members

### Kent County Chapter

Lyle C. Blackburn, Libby, McNeill & Libby of Canada Ltd., Chatham.  
Donald O. Boufford, Libby, McNeill & Libby of Canada Ltd., Chatham.  
Robert G. Schives, Western Freight Lines Ltd., Chatham.

### Kingston Chapter

Robert Storey, Canadian Industries Ltd., Kingston.  
Ernest J. Ashby, Canadian Industries Ltd., Kingston.

### Kitchener Chapter

Gordon D. Tiller, Federal Wire & Cable Co. Ltd., Guelph.

### Ottawa Chapter

Cecil K. Wolff, Woods Manufacturing Co. Ltd., Ottawa.

### Toronto Chapter

J. Hector Soulier, Standard Paving & Materials Ltd., Toronto.  
John Otto, Maple Leaf Milling Co. Ltd., Toronto.  
Wm. John Smallacombe, Maple Leaf Milling Co. Ltd., Toronto.  
J. R. Mewhinney, Dominion Paper Box Co. Ltd., Toronto.

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### Vancouver Chapter.

Wm. B. Couldwell, Canadian White Pine Co. Ltd., Vancouver.

### Windsor Chapter

Clifford A. Bailey, Bulmer Typewriter Company, Windsor.

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## The Society of Industrial and Cost Accountants of Manitoba

It is with a great deal of pleasure and much pride that we announce the Incorporation by Private Bill of the Society of Industrial & Cost Accountants of Manitoba which now becomes the fifth provincial society to be affiliated with The Canadian Society of Cost Accountants and Industrial Engineers. Throughout the Province there has been evident a widespread interest in the Incorporation of the Manitoba Society and the passage of this Bill will undoubtedly mark the introduction of a very active and influential provincial body. Not only does it mean the addition to our Society of another body backed by provincial legislation, but it means that a large group of very capable men have been brought into the organization, which in turn means added strength.

The passage of this Bill represents the efforts put forth by prominent accountants in the City of Winnipeg. We are particularly grateful for the persistent effort put forth by William Dunbar, George Elliott, W. J. McDonald, D. Sprague, J. H. Smith, N. T. Sinclair, D. J. Campbell, V. C. Nix and R. B. Strange. The officers and directors are indeed pleased to welcome into our Society the members who make up The Society of Industrial and Cost Accountants of Manitoba and sincerely hope that they will assume their rightful place in the parent organization.

The following are the Charter Members of The Society of Industrial & Cost Accountants of Manitoba:

- W. Aitken, C.A., Asst. Comptroller, The Canadian Wheat Board, Winnipeg, Manitoba.
- D. J. Campbell, C.A., Chartered Accountant, Thornton, Milne & Campbell, Winnipeg, Manitoba.
- A. B. Downing, Department Manager, McKenzie Seed Company, Brandon, Manitoba.
- V. Driver, C.A., City Auditor, Auditor's Office, Civic Offices, Winnipeg, Manitoba.
- Wm. Dunbar, Comptroller, MacDonald Bros. Aircraft Ltd., Winnipeg, Manitoba.
- W. G. Dunbar, C.A., Chartered Accountant, Sharp, Woodley & Co., Winnipeg, Manitoba.
- G. H. Elliott, Secretary-Treasurer, Commonwealth Construction Co. Ltd., Winnipeg, Manitoba.
- T. M. Elliott, Supervisor Audit Dept., T. Eaton Company Ltd., Winnipeg, Manitoba.
- G. P. Fairbairn, C.G.A., Accountant & Office Manager, Winnipeg Supply & Fuel Co. Ltd., Winnipeg, Manitoba.

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- Clifford Harford, Asst. to General Manager, Fur Trade Department, Hudson's Bay Company, Winnipeg, Manitoba.
- G. E. Haston, Secretary, The Tribune, Winnipeg, Manitoba.
- D. C. Hodson, Division Comptroller, Dominion Bridge Co. Ltd., Winnipeg, Manitoba.
- J. M. Kirkpatrick, B.A., C.G.A., Comptroller, Moore Business Forms Western Ltd., Winnipeg, Manitoba.
- G. W. Lawrence, Controller, Retail Stores Office, Hudson's Bay Company, Winnipeg, Manitoba.
- F. J. Manning, President, Manitoba Steel Foundries Ltd., Winnipeg, Man.
- D. B. McGilvray, Chief Clerk, Hudson Bay Mining & Smelting Co., Flin Flon, Manitoba.
- W. J. MacDonald, F.C.A., Chartered Accountant, Millar, MacDonald & Co., Winnipeg, Manitoba.
- W. McNaught, Department Head, T. Eaton Co. Ltd., Winnipeg, Manitoba.
- D. A. B. Murray, C.A., Director, Osler, Hammond & Nanton, Winnipeg, Manitoba.
- V. C. Nix, Manager, Claim & Personnel Depts., Security Storage Co. Ltd., Winnipeg, Manitoba.
- W. J. Porter, Office Manager, Hilton Bros. Ltd., Winnipeg, Manitoba.
- O. W. Shook, Office Manager, Burns & Co. Ltd., Winnipeg, Manitoba.
- N. T. Sinclair, Office Manager, Canada Packers Limited, St. Boniface, Manitoba.
- J. H. Smith, Controller, Hudson's Bay Co. (Retail), Winnipeg, Manitoba.
- D. Sprague, C.A., Chartered Accountant, Laird, Sprague & Co., Winnipeg, Manitoba.
- C. A. Steidl, C.A., Controller, Marshall Wells Co. Ltd., Winnipeg, Manitoba.
- E. Weber, Asst. Secretary and Asst. Treasurer, Hudson's Bay Mining & Smelting Co. Ltd., Winnipeg, Manitoba.
- S. R. Willis, Manager, International Business Machines Co. Ltd., Winnipeg, Manitoba.
- R. W. Wilton, Secretary-Treasurer, Great West Coal Co. Ltd., Brandon, Manitoba.
- T. H. Rathjen, Treasurer, Federal Grain Co. Ltd., Winnipeg, Manitoba.
- R. D. McLean, Supervisor, Acctg. Department, T. Eaton Co. Ltd., Winnipeg, Manitoba.
- J. G. Mundie, C.A., Resident Partner, Riddell, Stead, Graham & Hutchison, Winnipeg, Manitoba.
- J. C. Wilson, Asst. Regional Auditor, Canadian National Railways Ltd.

## Chapter Notes

### BAY OF QUINTE

The Bay of Quinte Chapter journeyed to Kingston for the combined Chapters' meeting on April 17th, at the LaSalle Hotel.

In the absence of the Provincial President, Mr. F. E. Wood, R.I.A., Mr. Davies, Secretary-Treasurer of the N. Slater Company, Hamilton, gave a very instructive talk; his subject the Battle of the Bulge, Costs versus Selling Price. The importance of close relations between Purchasing Agent, Cost Accountant and Engineer, also the advantages of industry employing a Purchasing Engineer who works with vendors to see that material is turned out to proper specifications and one that is familiar with cost reductions in the favour of the company, were expertly explained by Mr. Davies.

Mr. G. W. Daly, Acting Chairman of the Kingston Chapter, expressed his wish that the combined meetings be exercised at least twice a year. Art Lockley, Chairman of the Belleville Chapter, expressed his thanks for the hospitality shown by the Kingston Chapter.

### CALGARY

The last regular meeting under the authority of the 1946-47 Directors was held in the Club Cafe on the 9th April. One of our own members, J. W. Randall, R.I.A., presented the subject "The Accountants' Place in Employer-Employee Relations," and led the discussion which followed. This proved a very interesting and instructive meeting as numerous opinions were expressed by the members and it was suggested that some of the questions raised be further discussed at some future meeting.

At the Annual Meeting of the Chapter, held on April 23rd, the following Directors were elected, L. W. Bessell, G. N. Hall, F. S. Holmes, W. J. Mack, D. G. Miller, T. A. Montgomery, and H. G. Saxton. The Directors appointed H. G. Saxton as Chairman of the Chapter, T. A. Montgomery, Vice-Chairman and F. S. Holmes, Secretary. Mr. A. W. McNeil was returned as Treasurer.

### EASTERN TOWNSHIPS

Mr. W. E. Sutherland, Chairman of the Educational Program, gave a short talk on the Society's educational courses at the April meeting of the Chapter. The speaker outlined the various rules and regulations governing courses and examinations and after concluding answered many questions of interested members and guests.

The election of officers for the coming year took up the rest of the meeting. Mr. H. J. Moffatt succeeds Mr. J. C. Dagneau as Chairman. Mr. L. Memory is the new Vice-Chairman, Mr. R. M. Cutts, Secretary, and Mr. R. E. Blake, Treasurer. The newly elected Board of Directors includes J. Corfield, W. E. Sutherland, A. A. Savage, R. C. Tate, J. Grundy and C. F. Taylor. Mr. J. C. Dagneau, the retiring Chairman automatically becomes a member of the Board.

A vote of thanks to the retiring officers was moved by Mr. J. Corfield and unanimously proclaimed by all present.

### FORT WILLIAM-PORT ARTHUR

The Fort William-Port Arthur Chapter at its April meeting was very

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capably addressed by Mr. F. E. Wood, O.B.E., R.I.A., President of the Society of Industrial and Cost Accountants of Ontario. Mr. R. B. LeCocq introduced Mr. Wood who spoke on "The Postwar Future of the Cost Accountant." The speaker outlined briefly what goes up to make a good cost accountant—he must have a keen mind, good common sense, basic accounting knowledge, practical experience, an attractive personality and most important, the ability to summarize and present essential data in a form readily understood by management. Modern cost accounting is a field in its own right with its sphere of activity midway between the general accountant and the engineer. The engineer and the cost accountant must of necessity work closely together and co-operation is the key note of operating efficiency.

The meeting adjourned after an interesting and informal discussion period.

## KELOWNA

The Royal Anne Hotel, Kelowna, was the setting for the first meeting of the Kelowna Chapter at which Mr. C. E. B. Bazett, C.A., was elected Chairman and Mr. G. E. Brown, Secretary-Treasurer. The following directors were also named, C. E. Brannan, D. S. Brickland, G. J. Jewell, B. M. Millner and Mr. C. W. Schmok. The speaker of the evening, Mr. F. Coburn, R.I.A., who is Supervising Treasury Officer of the Dominion Department of Finance, Vancouver, B.C., gives an insight into the many accounting and human interest problems that his department met and overcame in their tremendously vital wartime work, the costing of all war contracts given by the Dominion Government in B.C. and the Yukon. Mr. Coburn in his capacity of Supervisor of Auditing, etc., was able to give the meeting the need and the future open to Cost Accountants and said there was a boundless field for men experienced in this branch of accounting. At the end of the address, a question and answer period was enjoyed after which Mr. Brown thanked the speaker and a very profitable and enjoyable meeting came to a close.

## NIAGARA

The Niagara Chapter held their regular meeting on Wednesday, April 16, 1947.

The speaker for the evening was Mr. A. E. Childs, Assistant Secretary-Treasurer for Canada Packers Limited, whose discourse, "The Internal Auditor" was rather unusual in that one seldom hears of the detailed duties and responsibilities of this phase of accounting. A general summary of Mr. Childs' most interesting and educational lecture would perhaps best be described as a follow-up of the duties, responsibilities and progress of the three stages—bookkeeper, accountant and auditor. These phases were in turn classified individually as general accountant, internal and external auditor, etc. The definition of the three phases was given as follows: (1) Bookkeeper—a clerk who handles the daily recording of business transactions; (2) Accountant—one who has the practical knowledge necessary to set up a procedure of book-keeping, who can close the books and compile the financial statements; (3) Auditor—an accountant who has the ability to analyse, check and criticize the accountants' work and procedure. An informal discussion period followed this talk. The



## CHAPTER NOTES

meeting was classed as "Welland Night" and the chair was ably represented by Mr. Maurice J. White of the Electro-Metallurgical plant in Welland.

### OTTAWA

The Ottawa Chapter held a very successful April Meeting at the cafeteria of the E. B. Eddy Co. in Hull. The speaker for the evening was Mr. W. M. Jackson of the Bank of Montreal. Mr. Jackson's address "A Bit About Banking" proved very interesting, particularly where he discussed the service rendered by banks to all types of business. As an introduction to his subject Mr. Jackson gave a brief history of the use of currency as a medium of exchange. After the speaker concluded his remarks there was a discussion period which resulted in a great cross-section of questions on banking. During this period everybody relaxed and enjoyed themselves immensely.

When the discussion period closed the directors of the chapter held a short business meeting while the other members amused themselves playing ping-pong and cards for the balance of the evening in the recreation room.

### ST. MAURICE VALLEY

Mr. A. V. Madge, Secretary-Treasurer and Director of Crawley & McCracken, Limited, Montreal, was guest speaker at the final meeting of the 1946-47 season held at the Laurentide Inn, Grand'Mere and presided over by Chairman Henry Pike. "Costs—What They Can Do For Us" was the subject which vitally interested all members and led into a detailed study of the many phases of cost accounting. Mr. Madge gave a very complete and thorough explanation of marginal costs of production and in terminating, said cost accounting is a valuable aid in Time and Motion Studies, Budgetary Control, Bonus Incentives and Production Control to name a few subjects. The speaker was introduced by Mr. D. B. Peddie and thanked by Mr. William Stansfield.

Mr. Henry Pike gave a very complete and interesting report of the year's activities and was particularly thanked by Mr. P. W. Wright. The new Chairman, Mr. A. F. Gurr, will be assisted by Mr. L. W. O'Connor and Mr. D. J. B. Peddie, Vice-Chairmen, and Mr. J. U. Courteau, the Secretary.

### WINDSOR

The joint general meeting of the Windsor Chapter of the Society of Industrial and Cost Accountants of Ontario and the Detroit Chapter of the National Association of Cost Accountants was held in the Norton Palmer Hotel on April 24, 1947. Jack Copland acted as chairman and after welcoming the guests who were present, read a list of those members who had been nominated for election to the board of directors for the coming term. There being no further nominations, the list was declared closed on motion of Jack Ayerst and Omer Cox. Mr. Geo. W. Schwarz then introduced the speaker of the evening, Mr. George N. Lilygren, Management Consultant, of Detroit. Mr. Lilygren chose as his topic "Cost Accounting from a practical viewpoint" and after reading a number of criticisms of present day cost accounting methods proceeded to outline some of the major shortcomings of our systems and how to overcome these. Mr. Lilygren had his subject well in hand and the talk was much enjoyed by all present. A discussion period followed after which the speaker was cordially thanked on behalf of those present by Mr. Frank R. Bear.

## Current Literature Digest

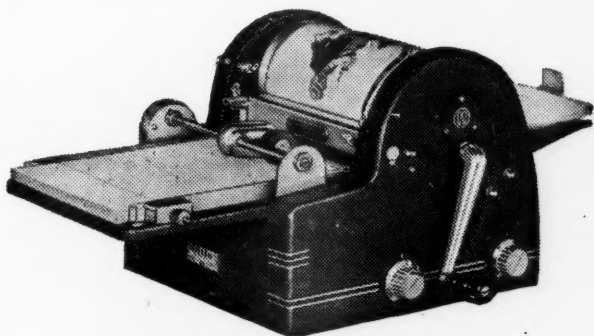
By HAROLD BRICKER, C.G.A., R.I.A.

### SOME BUDGET OBSERVATIONS FOR 1947

Many of us will recall the interesting talk given to us at the annual meeting in Niagara Falls last year, by Mr. Edmund La Rose of the Rochester Chapter of the Controllars' Institute of America. In a recent issue of the *Management Review*, he gives some budgeting observations for this 1947 year, under the heading of "The controller will again be on the spot in 1947".

As a guidance for those executives who must shoulder this responsibility, he offers the following:

1. Segregate sales forecasts between durable and non-durable goods.
2. Segregate profitable and non-profitable units (sales mix.).
3. Reset unit sales mix if the cost of sales ratio is not satisfactory.
4. Limit sales forecasts to labor or labor load and then according to product demand.
5. The sales dollar budget will finally be determined on the basis of labor-load absorption and will include present and anticipated price changes.
6. Adjustment in inventories will be required for certain product lines which may therefore allow for an increase or decrease in labor load and in sales.
7. Continue to maintain inventory on the basis of high turnover with finished stock being held at a minimum in 1947. Same should be true of department stores and wholesalers.
8. Increase expenditure budget for both process and product development.
9. Provide wage contingent up to 10% increase.
10. Eliminate overtime and waiting for work as far as possible.
11. Obtain long term material requirements for use of complete bill of material and tabulate for product reservations and shortages.
12. Reduce variable expense ratios to prewar levels. Allow for labor rate increase or increase in selling price.
13. Consider present and future long term standard overhead rates and make changes in 1946 inventory valuation if possible for both tax advantage and to avoid subsequent losses in 1947 and thereafter.
14. Write off excess war materials if any, and excess product (over two-year total unit sale in manufacturing, one year total unit sale in wholesaling).
15. Consider normal cost inventory valuation. Excess losses in the current period should be below the line in current cost of sales.
16. Seasonal sales will return in 1947. Segregate by related lines of product in order to establish product profit and loss.
17. Selling expense will return in greater volume in 1947. Plan sales and inventory budget accordingly.
18. Selling expense will require planning and control in 1947. Market



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analysis will determine effort and routing. Advertising on certain lines will again become seasonal and will be by product line, which will effect product trend.

These points are very generally interesting.

### COST ACCOUNTING RESEARCH

The New York Certified Public Accountant recently published an article by Theodore Lang, C.P.A., under the title, *The Road to Better Management*.

Some of the statements are of especial interest to Cost Accountants. Cost research is only one of many lines of investigation now going on in every field of activity. We live in the age of the scientist and of the man who puts the scientist's theories to work—the engineer.

Research implies a search for the unknown and the formulation of a theory which would explain observed phenomena. The engineer takes a given theory and his job is to make it work, to put it to some practical use. In time this involves finding the answers to many questions, such as, the length of time for the manufacturing cycle, the equipment required, the availability of the raw materials, the comparative costs of the various methods of production.

All this implies that there are different kinds of research. Most people have the idea that research is something mysterious, that is practised by a group of persons removed from the routine of everyday life, who putter around in a laboratory and finally achieve something whose applicability in improving our daily lives is highly problematical.

The fact is, most research is not of this basic type. Every time the chief hands out a special assignment and asks for a report, it involves a measure of research through investigating the facts and drawing the proper conclusions.

Research may therefore be defined as a systematic inquiry calling for the assembling of facts, and, their arrangement into a consistent pattern leading to a conclusion. This may consist of a series of steps which might include:

1. Observation of the facts.
2. Formulation of a hypothesis, i.e., a working theory to explain the observed facts.
3. A systematic gathering of additional facts, i.e., observed data, to see if they fit the hypothesis.
4. Conclusion in the form of a general statement.

It is almost certain that as time goes on, the real work of the cost accountant will tend more and more to be in the field of developing special costs for special purposes.

As labor rates go up, more and more automatic machinery will take the place of manual labor. This is not a solution since the introduction of more machinery pushes the break-even point to higher levels, so that the safety margin of the business steadily shrinks. To these problems, the cost accountant can provide at least partial answers. It is evident therefore that the cost accountants' field of inquiry, that is, the scope of his research, will take him into every activity where costs are needed for managerial action. This variety of the uses of costs, in their field, will constitute the fundamental area in which research will be carried on.

## CURRENT LITERATURE DIGEST

### COST ACCOUNTING'S ROLE IN MANAGEMENT

Many of our important decisions must be predicated upon information contained in cost reports. Past history or future forecasts may be involved but in either case, the work of the cost accountant may influence for good or evil, basic policy decisions.

This is a conjecture by F. J. Carr, St. Louis, Mo., in a recent N.A.C.A. bulletin. He covers many problems of the cost accountant, among which there are some interesting comments, such as the following:

The cost accountant, steeped in his problem of accumulating, distributing, and interpreting cost figures, and bound by the practices and conventions of his trade, may lack some of the appreciation of the end use of the result and the vital importance to management of truly correct cost figures. Management, on the other hand, looking chiefly at the end result and often having preconceived ideas of what that result should be, may fail to recognize the inherent difficulties and problems involved in the computation of the figures.

He points out some of the problems of the cost accountant that produce what to some may appear to be questionable results. Accounting is not an exact science. It is a code of principles and practices and conventions that has developed over the years. It has proven in actual experience to be practical and to produce results that reasonably represent the facts. However, one can endeavour to compare the income statements or the balance sheets of the two concerns, even those in the same class of industry, only to find that the accounts are so different as to defy comparison. The reason is that accounting principles allow a wide latitude of application depending on individual judgment and preferences resulting from experience. There is an advance toward comparability of results, through the development of uniform practices in specific industries, but, there has been hardly more than a beginning to this trend.

Cost accounting should be looked upon as a vital cog in the industrial machine and not as a necessary evil. The present economic situation only serves to increase the importance and value of cost data. Making policy decisions may be more difficult than ever before. The assurance with which you answer these questions involving cost implications, will depend to a large degree upon your confidence in your cost figures.

Then, cost accounting will be an important tool of management and will probably be accepted, fearlessly, as a fact by everyone.

### DEPRECIATION? WHAT IS THE CANADIAN VIEWPOINT?

A. A. Fitzgerald, in the Australian Accountant, comments of this timely subject. An English accountant once defined Depreciation as "Accrued Renewals". The theory underlying this might contemplate:

1. During the lifetime of the asset, funds should be accumulated to provide for the replacement of the asset, when it is of no further use to the business.

2. The total funds to be so accumulated should amount to the cost of renewal irrespective of the original cost of the replaced asset.

In American accounting circles Depreciation is "Expired Capital Outlay." The theory and viewpoint might be:

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1. An asset can never be replaced by renewal. The business may cease operations and even if it continues, it is likely, under modern conditions, that, when the asset has outlived its usefulness, it will be replaced by a larger and improved asset,—possibly a machine of an entirely different type.

2. The real purpose of depreciation is to ensure that when an asset in which capital has been invested is scrapped, the original capital invested should remain intact, to be used either for further capital investment by the business or for return to the proprietors. That being so, the amount to be provided by means of depreciation charges is the original cost of the replaced asset, (less, of course, anything realized for its sale when scrapped) and NOT the cost of the new asset.

What do you think? The problem to be dealt with is that of apportioning the total amount of Capital outlay to be written off over the various accounting periods during which the assets acquired are used.

In other words, what various methods are there for calculating and providing for Depreciation, in the Canadian business industrial and Cost Accounting fields?



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**ENGINEERING & MANAGEMENT SERVICES LIMITED**

**67 YONGE STREET**

**TORONTO, CANADA**

## COST AND MANAGEMENT

# Canadian Society of Cost Accountants and Industrial Engineers

### ANNUAL MEETING

Royal Edward Hotel, Fort William

Thursday, July 3rd

9.30 a.m.	Registration
10.00 a.m.	Directors Meeting
12.30 p.m.	Luncheon
2.30 p.m.	Annual General Meeting
6.00 p.m.	Scenic Tour
7.00 p.m.	Dinner at Chippawa Park, Entertainment, Dancing

Friday, July 4th

9.30 a.m.	Meeting of Directors for 1947-48
12.30 p.m.	Luncheon
2.00 p.m.	Technical Sessions Theme—"Inventory Valuations." Speakers—Mr. F. H. Black, C.A., Black, Hanson & Black, Chartered Accountants Fort William, Ontario. Mr. D. G. Seebach, R.I.A., Comptroller, The B. F. Goodrich Tire & Rubber Co. Ltd., Kitchener, Ontario.
7.00 p.m.	Annual Dinner Speaker—The Honourable C. D. Howe, Minister of Reconstruction & Supply. Entertainment.

Special entertainment is being provided for the ladies Thursday and Friday afternoons.

Saturday, July 5th

9.30 a.m.	Committee Meetings
A scenic tour and a golf game have been arranged.	

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# The Society of Industrial and Cost Accountants of Ontario

### ANNUAL MEETING

King Edward Hotel, Toronto

Saturday, June 21st, 1947

10.00 a.m.	Meeting of Council
12.30 p.m.	Luncheon Speaker: The Honourable J. E. Lawson, K.C.
2.30 p.m.	Annual General Meeting
4.30 p.m.	Meeting of Council for 1947-48

## Unemployment Insurance

### The Bulk Method of Contribution-Payments by Employers

By arrangement with CCH Canadian Limited, publishers of Canadian Labour Law Reporter, Canadian Tax Reporter, etc., we are reproducing below their editorial comment on the "Bulk" method of payment of Unemployment Insurance contributions. This should be of particular interest to our readers who have the type of business to which it is applicable.

The advantages to be had from the "Bulk Method" of paying unemployment insurance contributions has not been widely appreciated in the past. A detailed analysis has been reproduced at ¶ 5017 (Canadian Labour Law Reporter) to explain the procedure to be followed by an employer desiring to adopt this arrangement which the Unemployment Insurance Act and Regulations offers.

The stamp method has proved to be best suited to the employer of a small staff and the metre method best adapted to the needs of the employer of a medium-size staff. The bulk method, however, is highly efficient and time-saving for a company which employs a relatively large number of persons in fairly stable employment.

Under this system, an employer may draft a plan for the payment of aggregate contributions over a stated period and submit it to the Unemployment Insurance Commission for approval. The Commission may require monthly statements and a certain book-keeping standard, as well as a surety bond if it deems one necessary. The arrangements agreed upon, however, will always be based on the circumstances of each case in order that as much unnecessary office work as possible will be avoided both for the Commission and the particular company.

A description of the procedure and the various forms which are available at local U.I.C. offices is given at ¶ 5107 (Canadian Labour Law Reporter) under the Unemployment Insurance tab.

[¶ 5017] **Payment Methods for Employers.**—There are four methods by which an employer may pay his contributions [See ¶ 25,411, Canadian Labour Law Reporter]:

- (1) The stamp method by which stamps are affixed to each employee's personal insurance book;
- (2) The meter method by which stamp forms are impressed on the books through the use of a metering device;
- (4) The bulk method, explained in detail below; and
- (5) The adjustment method which is used in cases of unpaid or underpaid contributions [See ¶ 25,415 and 25,426, Canadian Labour Law Reporter].

**The Bulk Payment Method** has distinct advantages for the employer who has a comparatively large number of employees in fairly constant employment. This method is contrasted with the stamp method of paying contributions which is the one best suited to the employer of a small number of employees, as well as with the meter machine method which is suited to the employer who may submit to the Commission a proposal for the payment of aggregate contributions over a stated period. [See ¶ 25,419, Canadian Labour Law Reporter.]



## UNEMPLOYMENT INSURANCE

**Permit to Operate Bulk Payment Method.**—If an employer wishes to obtain permission to make contributions by the Bulk Payment method, he must apply to the Unemployment Insurance Commission on Form U.I.C. 443B (549). This form may be obtained through the local office of the Commission serving the area where the employer's establishment is located. Upon receipt of the Form, the Commission will send an Unemployment Insurance Auditor to the Head Office of the Employer to discuss with and explain to the proper officers, the procedure to be followed under the method. If after such discussion and explanation, all concerned are satisfied that the method is an appropriate means for the employer to follow in making contributions, the Commission will issue the necessary authority therefor.

**Monthly Remittance Statement.**—A Monthly Remittance Form (U.I.C. 443D) is provided for employers who make contributions under the Bulk Payment Method. The Form, when completed, will show an employer's insured employees by wage groups or classes, the total number of days contributed by each and such group or class, and the employees and employer contributions by each group. The Remittance Statement must be forwarded, in duplicate, before the 15th of each month to the Unemployment Insurance Commission, attention Chief Treasury Officer, Ottawa.

Consolidated Remittance Statements should be forwarded to the Commission by employers who have branches, subsidiaries or divisions but separate statements of each branch, subsidiary or division should be retained on the employer's files to enable Unemployment Insurance Auditors to reconcile them with the consolidated statements.

**Contribution Statement for Employee Leaving Service.**—An employer who uses the Bulk Payment Method of making contributions, must issue an insurance book to every employee who separates from employment. Obviously stamps are not used in such a case to indicate the amount of contribution. A Contribution Statement (Form U.I.C. 443) is available and must be used for such purpose. The Contribution Statement is completed and securely attached (bostitched) to the insurance book.

An employee who is not in possession of an insurance book must be registered with the Commission without delay, and upon investigation he will receive a registration card as an insured person showing his insurance number. An insurance book will be issued if it is anticipated that the services of an employee will be terminated before the end of the insurance year, March 31. For this purpose the bulk payer may secure a small supply of blank insurance books from the Commission's local office.

For employees in service at the end of the insured year, March 31, in each year, the completed contribution statement will be treated in two ways, depending on whether or not the employees possess insurance books which have been issued prior to service with the bulk payer. Contribution statements for employees who do not possess insurance books will be completed and totalled and forwarded to the nearest local office of the Commission. For employees who have insurance books which contain other contributions, the completed and totalled contribution statements will be completed by the employer and attached in the books and sent separately to the Commission's local office. If this procedure is followed, it will be unnecessary for the employer to retain a full five-year record of the employee's contributions.

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An employer desiring additional information regarding the application of the **Bulk Payment Method** to his particular circumstances should consult insurance officers of the Unemployment Insurance Commission. ([See also ¶ 25,419, Canadian Labour Law Reporter.]

### Service Finds Executives for Canadian Industry

One of the most difficult things to obtain is an executive or specialist. The right man to fill a top management post is not obtained by a simple advertisement in the local paper. This may help, but it certainly won't bring a line-up of suitable applicants to your office door.

To give assistance in this problem, the Executive and Professional Division of National Employment Service was formed in 1945. Five regional offices were established, at Moncton, Montreal, Toronto, Winnipeg and Vancouver, to act as co-operative mediums with employers in finding men or women with these qualifications:

1. Male executive earning \$2,400, or more per year.
2. Women who have earned or can show the ability to earn, \$1,800 per year.
3. Discharged members of the armed forces whose income before, or during hostilities, came within the categories of paragraphs (1) and (2) above.
4. University graduates (men or women), who have earned or have the ability to commence at a starting salary of \$1,800 per year.
5. Skilled or technical personnel who have earned or can show the ability to earn \$1,800 or more per year.

To assist persons of executive or professional calibre in locating positions commensurate with their abilities, qualifications, and experience, employer relations officers maintain continual contact with the chief executives of business. These representatives of the Executive and Professional Divisions are trained to analyze the personnel requirements of business, find or create vacancies, and fill out job description charts outlining qualifications and experience desired, the duties and responsibilities involved, and estimate the salary to be paid.

As an example of how the organization operates, the Ontario regional officers are in constant touch with employers throughout Ontario. One is a graduate of commerce and finance from Queen's University with ten years of accounting, office management, personnel, sales and sales promotion. This man spent two of six years in the army as personnel selection officer, interviewing, testing, selecting and upgrading officers and men in various parts of the world. The other, a graduate in psychology, spent eight years in personnel, sales and sales promotion, five years as infantry officer in the Battle of Britain and Italian campaign, before returning to Canada to complete fourteen months as an army rehabilitation officer, counselling officers and men on their retirement from active service.

Once job description charts are completed by employer relations officers in the presence, if possible, of employers, these forms are given to

## SERVICE FINDS EXECUTIVES FOR CANADIAN INDUSTRY

the specific interviewers, trained to make the selection of applicants from their files. These men and women, trained in assessing the abilities of applicants, often reinterview men or women before being referred for a personal discussion with the employer. They listen to the applicant's story, analyze him, then consult the job description charts and vacancies listed. Matching specifications of a job with the qualifications of the executive or professional type of applicant is a highly skilled job in itself.

As employers often demand highly trained and specialized personnel for senior executive positions, employer relations officers constantly keep in touch with professional associations and universities, one source from which these desirable applicants can be found.

In addition to the five regional offices across Canada, an executive and professional liaison officer has been installed in the local offices of the National Employment Division in most of the larger centres. Where there is not an Executive and Professional Officer designated, the manager is delegated to look after this work.

The following is a typical list of some types of applicants registered at Toronto E. and P. office, 200 Bay St.: Production managers; chemists; professional engineers; business executives; private secretaries; sales and sales promotion managers; advertising managers; public relations managers; public or industrial accountants; personnel or industrial relations managers.

Many firms and individuals have found the services of the Executive and Professional branch invaluable for these reasons:

1. A ready reservoir of competent men or women to choose from.
2. A prescreening of potential applicants saves employers time. Where firm is located some distance from suitable labor market, E. and P. offices have been found to offer real service in screening and making appointments for final interviews by employer.
3. E. and P. office has been used as an employment intermediary to the satisfaction of employer and prospective employee. For example, some men applying to a blind advertisement refer advertiser to the E. and P. office for complete details of their qualifications. The advertiser, in turn, by referring the applicants to the E. and P. office for details, need only put the broad essentials in the advertisement.

## NOTICE

SO THAT WE MAY PROVIDE ALL MEMBERS WITH BETTER LIBRARY SERVICE, IT IS REQUESTED THAT MEMBERS WHO HAVE BOOKS ON LOAN, RETURN ALL OR ANY BOOKS THEY HAVE ALREADY READ.

## **\* Inventory Control**

# **A Contributing Factor to Profit Making**

By HAROLD RILEY

Engineering & Management Services Limited, Toronto.

It is paradoxical that the largest item among the current assets in the balance sheet of most industrial concerns is either entirely uncontrolled or inadequately controlled throughout the year, and in many instances is given only a superficial independent check at the close of the fiscal period. The major part of a company's working capital is tied up in inventory, yet management has less control over it than any other asset in the business, and the auditor is unable to check the figure to the same extent as cash and receivables and other items appearing in the balance sheet.

This immediately raises the question as to what constitutes inventory control. However, before dealing with this aspect of the subject, a very useful purpose might be served by management asking itself whether it does know as much about its inventory as it does about the other assets under its control. For instance, it knows that the cash and bank balances shown on the monthly financial statement are accurate to a cent. It knows that the accounts receivable total, subject to a reasonable provision made for possible losses, is worth 100 cents on the dollar to the company. But does it know whether the inventory figure in the interim monthly statements is within tens of thousands of dollars (or even hundreds of thousands in some cases) of the actual value. The year-end results are not upset because the amount of money in the bank is either more or less than it was thought to be, or because the accounts receivable figure needs substantial adjustment. But how often have the interim figures received a severe jolt when the year-end physical inventory has been completed? Has management sufficient confidence in the accuracy of the book value of the inventory that it would accept it at the year-end without taking physical inventory? Are cash and receivable figures accurate, but inventory largely guesswork?

Most businesses have a tight system of control over the receipt and disbursement of money, the bank balance is checked regularly and the petty cash fund is kept under strict surveillance. Many concerns have a credit and collection department to reduce losses in the form of bad debts to a minimum, and to see that the accounts are kept current, so that the portion of working capital required to finance customers' credit is held as low as possible consistent with the volume of business and is turned over as frequently as possible. Usually the accounts receivable are "aged" at the close of each month, so that management may know what portion of the outstanding amount is slow in coming in, and special attention is paid to slow-moving accounts.

The auditor is able to check all the cash disbursements and generally all the cash receipts, or he can test check them, and he can verify the accuracy of the cash balance appearing in the financial statement. The

\*This is the third in a series of six articles written for Cost & Management by Mr. Riley.

## INVENTORY CONTROL

auditor can check the transactions appearing in the customers' accounts—he can trace the records showing the value of goods shipped to those customers—he can verify in several ways the accuracy of the value of this asset shown in the financial statement—and he can form an opinion as to the adequacy of any provision for loss, and the probable realizable value of the asset.

It does seem strange that the situation with regard to the inventory is so totally different. Surely management must not neglect to control inventory on the grounds that this presents a more difficult problem than controlling cash and receivables. Management must realize that obsolete inventory can cause a loss which may be more serious than a bad account. Management must realize that profit is made by turning the inventory over and not by keeping it dormant. Management must realize that an unbalanced inventory is more serious than an unbalanced accounts receivable ledger. Management must realize that a monthly operating statement, which contains an inventory figure that has no factual basis, is practically valueless.

If management will change its attitude about inventory control, and will substitute an accurate tight system for the present hit-or-miss method, much greater plant efficiency and economy will result. Until management shows a keener interest in inventory, it cannot expect its employees to be concerned. The entire organization must become inventory conscious; they must understand that **INVENTORY IS MONEY**. If the petty cash box is upst and the contents spill on the office floor, chairs are moved, someone crawls under desks, every crevice is searched until the last penny is retrieved. But, if a keg of bolts spills in the shop, who bothers to pick them up? Or, if it spills in the yard, who is interested enough to see that they are not allowed to lie there until they are ground into the mud of the driveway by traffic?

The controller and the industrial accountant do not appear to have done very much to remedy this situation. During the war years, in many instances there may have been extenuating circumstances, but these no longer apply. What matters is whether they are doing anything about the situation now.

## RECORDS MISTAKEN FOR CONTROL

Frequently management is under a misapprehension in thinking it has inventory control when all it has is a perpetual inventory record, or only a requisition system for the withdrawal of material from stores.

The management of one organization believed it had a highly satisfactory inventory control system because the year-end physical inventory on several occasions had varied only slightly from the balance shown by the general accounting control. The inventory contained many articles that could be taken from the plant without difficulty and all items were in short supply for civilian purposes during the war years.

Upon inquiry, it was found that one person was in charge of ordering, receiving, issuing from requisition, pricing requisitions, keeping perpetual inventory records, physical control of stockroom, and taking and pricing year-end inventory. After the requisitions were priced, they were forwarded to the accounting department and furnished the entry to relieve the inventory control of materials used during the period. The requisitions were

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not charged to any job cost; only occasionally were a few rough cost figures assembled for a job.

It is unnecessary to elaborate on the fallacy that this constitutes inventory control. Its weaknesses even as a system of internal check are too obvious to call for comment. There were records galore, but there was absolutely no control.

A good perpetual inventory system is an aid to management and to the auditors. By itself it does not constitute control. As in the case just referred to, it may not even be fool proof. To be of value as a record, it must be co-ordinated with the cost system, and to be of value as a control it must be transferred from an historical function to a dynamic role in the conduct of the business.

### IS INVENTORY CONTROL WORTH WHILE?

Before dealing with the main features of dynamic inventory control, it may be well to consider whether such a control is necessary and worth while. Management, in many cases, has been content to delegate the responsibility of purchasing to an employee who acts by rule of thumb, maintaining, say, a stock equivalent to an average three months' supply. Management has grown accustomed to a hit-or-miss method of getting material and component parts to their place in the production line on time. Management has condoned the lack of cost records which has reduced the valuation of work-in-progress, and finished goods inventories, to guess-work, often thinking this was of little importance because if the figure was too low or too high the difference would be reflected in the results of the following year. Where these conditions apply, management has failed to realize they may be costing the business dearly and there is no way of determining the loss.

Surely with material costs at a higher level than ever before and with a more serious effect of disrupted production on customer goodwill, management should ask itself whether installation of a proper inventory control system would not be well worth while. Management can best answer this question by asking further questions. How often has our production line been held up because material or parts which were understood to be on hand were not available when required, and upon investigation it has been found that they were in stock when the order was received but in the interval have been used on another job? How often has the operation of one department been disrupted because the previous department delivered partly worked material not required until the following month and little or none of that needed to complete the deliveries called for in the current month? How often is the floor of a department cluttered with an accumulation of partly worked material received from a previous department in quantities which exceed the capacity of the department receiving them? How often has it been impossible to complete an order because of excessive spoiled work not reported until the final operation or assembly? (Frequently the additional material purchased does not find its way into the cost records). How often has our production schedule been disrupted, with consequent failure on our part to complete deliveries on time, because of faulty material or parts getting into the production line instead of being rejected upon receipt and replaced as quickly as possible with usable supplies? What items are we dangerously low on at the

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moment? How long does it take to get the answer to the previous question?

Management may also ask,—Do we purchase in the most economical quantities? Do we know the current status of our inventories of raw materials, work-in-process, finished parts, and completed products, and is there a proper balance maintained among them to permit peak operating efficiency? This last question brings management face-to-face with the subject of unbalanced inventories.

### THE NEED FOR BALANCED INVENTORIES

Industry in general is faced with considerably higher costs of raw material than prevailed before the war. Consequently it will now take a larger amount of working capital to carry the same physical quantity of inventory as in the pre-war period.

The supply situation in the period immediately following the war was such that unbalanced inventories were inevitable. Where materials were available there was a tendency on the part of purchasing agents to buy to a point in excess of actual requirements, not knowing when they would be able to obtain subsequent deliveries. In this way, some manufacturers piled up inventories of items they could not use while other manufacturers were held up because they had none of these items.

However, much more frequently, purchasing agents were unable to obtain a sufficient supply of material to maintain production as scheduled (assuming there was a schedule). Almost invariably some item was in short supply with the result that, while seventy-five per cent or more of the materials might be on hand, the order could not be completed.

Other unbalanced inventories and inventory bottlenecks were caused by buying in anticipation of price increases on the one hand and holding for price increases on the other.

The time has arrived for bringing order out of the chaotic inventory situation. Of what use are thousands of radio chassis without cabinets, or stoves without heating elements? Inventory analysis is the first and fundamental step toward a balanced inventory and a controlled inventory.

As the supply situation adjusts itself, the inventory must no longer be determined by circumstance but by management. Attention must be focussed on the items that are scarcest and purchasing must be regulated so that the inventory is rounded out in terms of finished units. If this is not done, an unbalanced inventory is likely to prove costly in warehousing and carrying charges, and in many instances in deterioration and even obsolescence. Creating or restoring a balanced inventory is one of the first steps toward control.

### INVENTORY CONTROL—A MEANS OF MAKING PROFIT

It is self evident that the loose inventory systems that abound in industry today contribute nothing in the way of profit to the business. On the contrary, they permit preventable losses to take place, frequently without the fact being known or the amount being ascertained. Taking physical inventory does not by itself show whether any material or parts have been lost. This can only be known if it is possible to compare what is in stock with a record of what should be in stock. It must be borne in



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mind that loss by pilferage may be only a small part of the loss a business sustains through its inventory.

Inventory control, in its true connotation, is a means of making profit. It would increase profit if it did nothing more than prevent leakages and other losses. However, it produces results of a positive nature as well. The profits it makes do not stand out in the operating and financial statements of the business, but they are none-the-less real.

Any factor which contributes to greater efficiency in the plant contributes to the greater profitability of the business. Inventory control constitutes a tool by which management can promote a greater measure of plant efficiency. There is less interruption of work due to lack of materials. Improved planning enables longer runs to be scheduled, resulting in fewer set-ups. By speeding up the flow of goods the over-all time of the manufacturing cycle is reduced. Improved scheduling, which forms part of the inventory control, provides the customer with more dependable and better service on deliveries. Anything that tends to promote customer goodwill will be an extremely important factor in business in the approaching highly competitive period.

Inventory control contributes to better machine loading and thus helps to minimize the capital investment in equipment.

Inventory control enables management to hold the investment in inventory to a minimum. It keeps account of slow-moving stock with a view to preventing obsolescence.

### THE CONCEPT OF OVER-ALL INVENTORY CONTROL

Much progress has been made in recent years in developing a co-ordinated inventory control embodying both physical and accounting features and extending from the phase of planning which precedes the ordering of materials to the shipping of the finished article. It enables the raw material inventory and the bank of partly worked or component parts to be maintained at levels low enough to keep warehousing and storage costs at a minimum, yet high enough to prevent interruptions of manufacturing operations. It guides and simplifies the day-to-day production by telling what stock there is and where it is and by placing the right quantity of the right materials at the right place in the production departments at the right time, thus facilitating a smooth flow through the plant. It keeps investment in finished products at the most economical level consistent with giving the customers first-rate service. It tells what the production was for the previous twenty-four hours or shift, and the cost of the production. It provides an accurate inventory figure for use in the monthly operating statement and facilitates the taking and pricing of the year-end inventory, which can then be checked in detail by the auditor. These are some of the more recent trends and developments in the field of inventory control and obviously they add to greater efficiency and economy in the operation of the business.

Just as the best time to control cost is before it takes place, so the best time to control inventory is before it is bought. The purpose of a business in purchasing raw material and parts is that they may be fabricated or assembled into products and sold at a profit. It stands to reason, then, that the inventory performs its proper function only as it bears a definite



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relationship to the sales program. Consequently, inventory control, if it is to be of maximum efficiency, must have its source in the company's **SALES FORECAST**, and it must be flexible enough that adjustments can be made in conformity with changes in sales volumes and types of products.

An inventory control which does not begin to function until after arrival of the material and parts on the company's premises is not adequate. A check-up in one plant revealed material on hand and on order to be hundreds of thousands of dollars in excess of the requirements of the sales program. Purchase orders had been placed by the purchasing agent to cover material required to fill sales orders received by the company. Subsequently some orders were cancelled and the material requirements of others were varied but the purchasing agent had omitted to adjust the company's commitments in line with these circumstances. Inventory accumulated causing an unnecessary tie-up of the company's working capital. Losses resulted because some of the material had deteriorated before it could be disposed of, and some was used in uneconomical sizes causing excessive waste.

Most concerns have some kind of **PRODUCTION SCHEDULE** and, if the business is run efficiently, this schedule will be developed from the sales program as a result of careful planning. Purchasing of material and parts must be made to fit the requirements of the production schedule in point of quantity, quality, and time. Obviously, until the material is available the work cannot be performed. Yet it is not uncommon for a production department to find, when it is ready to start a job, that some of the material or parts have not been ordered. All uncertainty as to the inventory situation must be removed. The production department must be able to give the go-ahead order for production, confident that it will not encounter a shortage of some material or part through lack of previous notification of the shortage by the material control department. All guess work as to the status of the raw material and parts inventory must be removed by means of accurate, current records.

Perhaps in no other phase of business is less **HUMAN JUDGMENT** devoted than in maintaining the level of inventory. Some companies leave the determination of how much material to order and when to order it entirely in the hands of a purchasing agent. Where this is done, management usually has relinquished its control over the money invested in inventory. To guard against this, some sort of mathematical system is often resorted to, such as fixed maximum and minimum levels usually based on past experience. Although this has the appearance of control, it is far from the most economical method of purchasing. Each item of inventory should be controlled so that the most economical amount is bought and carried.

When material and parts are received, they must be checked not only for quantity but also for quality. How often has it been impossible to complete an order because castings which have been in the stock room for weeks or months are found to be faulty when the production department starts to use them? A **QUALITY TEST** when material and parts are received will prevent many a breakdown in the production schedule.

Few concerns operate a system of physical inventory control which is not capable of improvement. In many cases, there are many weaknesses.

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Why should such a condition be tolerated in this section of the business when reasonable safeguards are provided over every other form of asset? Discretion must of course be used in designing a system for control of material and parts in the stockroom in order that the clerical work is kept within reasonable bounds. Frequently an unnecessary amount of work is done to maintain perpetual inventory records. Individual entries are often quite unnecessary and can be avoided by use of a ticket system where items are requisitioned frequently, or by issuing a bill of material covering the production schedule for a reasonable period of time. It is not feasible at this time to deal with the various methods of stock room control or perpetual inventory records, but these should be as fool-proof as possible.

In dealing with ordering of material and parts, emphasis was placed on the necessity of relating this to the production schedule. A bill of material, which should be in keeping with the material lists used for ordering material and parts including any adjustments necessitated by the engineering department after the original estimate, will form the best means of issuing material and parts from stores. In many instances, some of the component parts will already have been processed in the plant and delivered into the stockroom until required. When material and parts are issued from a bill of material, the superintendent or foreman will know that he has received all that is required to complete the job according to the engineering department. It sometimes happens that the bill of material is incomplete and items listed thereon are not sufficient to finish the job. If the superintendent or foreman finds this to be the case, he should have the bill of material corrected immediately (care should be taken that all copies are corrected as they may have been distributed to several departments). It is not uncommon for additional material and parts to be issued without the cost being charged to the job. Besides having all necessary material on hand for an order, the superintendent or foreman should know how many direct labour hours have been estimated for the job. He is then in a position to control the flow of material through the plant or department in accordance with predetermined planning.

Control over material and parts should be maintained as the job progresses through the plant. This can usually be accomplished by means of a FLOW CARD, so that the production department knows at all times where the parts in process are and what stage they are at. Inspection may be an important factor in controlling quality and avoiding excessive waste, and this will depend upon the circumstances of each case.

Material scheduling and handling are important factors in production and may have a considerable bearing on manufacturing cost. They may also have a bearing on the quantity of inventory a business carries. However, they are related more closely to labour cost than to material cost and consequently reference will be made to them when labour and overhead costs are dealt with.

Upon completion of the job order, the product or the partly processed material or parts, as the case may be, should be delivered immediately to the shipping department or to the stock room.

### STOCK ROOM CONTROL

The control of material and parts in the stock room is of great importance. The utmost care should be taken to ensure that after the items

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called for on a bill of material have been issued, no employee can draw additional material or parts without the superintendent's or foreman's authority to replace any that have been spoiled or are missing. A reasonable allowance will have been made at the time of purchasing to cover normal losses, but if this is exceeded and the stockroom issues material or parts to make good these losses it may be robbing another job, thereby causing a breakdown in that production schedule. Where actual material loss exceeds the allowance made, it may be necessary for the purchasing department to buy an additional small quantity of material or parts or to have a short run put through the factory to maintain the inventory requirements, and this is generally a costly procedure. It is highly important that a report of spoiled work should be required; the superintendent should review this and a copy should go to the cost department. This illustrates but one of many matters relating to the issuance of material and parts by the stockroom where there is need for a greater degree of supervision.

The system of control must be determined by the requirements of the particular case.

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The accounting control should be correlated to the physical control, each constituting an integral part of the overall inventory control plan.

Some concerns maintain an elaborate perpetual inventory record in value as well as in quantity. The particular circumstances of the case will determine whether the quantity record is not sufficient by itself. Clerical work should be kept within reasonable bounds; it should be utilized to the greatest possible advantage, and there may be some more vital aspects of inventory control to which the efforts of the staff may be diverted to better purpose.

A standard cost system is a great aid in inventory control. In these days of varying prices of material it enables standard prices to be adopted for costing. Where actual prices of material or parts purchased are above or below the standard price, the difference is reflected in a variance account. It also greatly facilitates the valuing of work-in-process.

But regardless of whether the system in use is standard costs or job costs a highly efficient accounting control can be maintained. The inventory control should have three subdivisions for material—raw material, work-in-process, and finished products. When material and parts are purchased, the cost will be debited to the raw material section of the control. Then as material and parts are put into production in accordance with a bill of material, to which reference has already been made, their value (as computed on the bill of material) will be debited to the work-in-process section of the inventory control and credited to the raw material section. Upon completion of the product, the value of the material content will be debited to the finished products section of the control and credited to the work-in-process section.

The relationship between the raw material control and the stockroom perpetual inventory record is clearly seen. The work-in-process (material) control represents the value of material and parts in production and is correlated with the production control and flow cards to which reference has previously been made.

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It is necessary at this point to make a brief reference to labour costs, although the general subject of labour control is not dealt with at this time. Under the overall plan of inventory control, direct labour is debited to the work-in-process (labour) section of the inventory control.

Upon completion of the product, or batch of products, the cost of the material content and the appropriate labour cost will be credited to the respective work-in-process controls and the total debited to the finished products section of the inventory control. The products will be duly recorded in the finished products perpetual inventory.

By using this method, management can have each month an accurate inventory figure, broken down into raw material, work-in-process, and finished products. Management can compare these figures month by month and can maintain the proper balance among the sections of the inventory. Where a situation is disclosed requiring remedial action, this can be taken quickly and adverse circumstances avoided which otherwise might not be reflected until the year-end inventory.

### SUMMARY

Management knows less about inventory than any other asset under its control.

Inventory—usually the largest item among current assets, if not all assets, in a balance sheet—is in most industrial organizations entirely uncontrolled or inadequately controlled.

Management often confuses records with control—there may be a superabundance of the former and yet none of the latter.

Overall control of inventory is something much wider than the mere physical control of material and parts in the stock room.

Overall inventory control is a correlated physical and accounting control. It begins with the ordering of material, related to the sales program and follows through the manufacturing cycle from the arrival of material and parts on the premises until shipment to the customer as finished products.

Overall inventory control not only reduces losses by pilferage, but it cuts down spoiled work and other waste and prevents obsolescence. It leads to a greater measure of plant efficiency and reduces the manufacturing cycle. Inventory turnover, which is regulated by the length of a manufacturing cycle, is a true measure of the efficiency of material control and utilization of material.

Overall inventory control enables management to exercise human judgment in maintaining a proper balance between raw material, work-in-process, and finished products. It enables management to hold the investment in inventory at a minimum—a highly important matter in these days of higher material and labour costs. It enables management at the same time to give the customer better service.

Overall inventory control provides management each month with an accurate inventory figure, broken down into raw material, work-in-process, and finished product. It can obviate taking physical inventory at the year-end—sometimes there is a more convenient time for this to be done.

The system needs not be elaborate or cumbersome. While it may appear to be aiming at theoretical perfection—and what system is worth

## INVENTORY CONTROL

anything if it does not do this—it is highly practical in its application and very effective in its results.

There is no mystery about inventory control, it is merely the application of common sense to the control of material throughout the manufacturing cycle. It calls for an accounting for all material and parts received, just as cash control calls for an accounting for all cash received. Inventory is merely another form of cash and should be controlled.

There is no ready-made system. Nevertheless, a system can be developed to meet the requirements of any concern. If management is actually desirous of knowing as much about its inventory as it does about its other assets, it can have ample information. If management wishes to stop inventory losses and make inventory control contribute to greater profitability of the business, it can do this.

Is the industrial accountant making his best contribution to the business in which he is engaged by bringing inventory under rigid control? Is he discussing the matter with the senior executives and stressing its importance in the future operation of the business?

If the goal of management is to attain the highest possible measure of efficiency, it must see that it has a properly integrated and correlated system of overall inventory control. The initiative in the matter rests with management—so does the responsibility.

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## ERRATA

January issue, Page 22, Paragraph 1, Line 3, should read "as well as the most modern type."

January issue, Page 25, Paragraph 5, Line 10, should read "by combining a variable budget."

March issue, Page 95, Paragraph 2, Line 5, should read "Where is it heading for in the future?"

March issue, Page 101, Paragraph 6, Line 1, delete the word "stock."

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## REMOTE CONTROL

A plant owner being down town one afternoon, saw his night watchman out when according to schedule he should be at home sleeping. On returning to the plant he called for the watchman's recorder sheets and noted that they were all properly punched.

However, on meeting the watchman down town a second time he decided to check the recorder sheets more closely. During the following few days he noted that the recording was regular and at the exact time every occasion. It was not a minute before nor one minute late. On calling the clock service man for his opinion the service man examined the clock and found that the watchman had very ingeniously installed a supplementary mechanism that operated the punch clock on the hour without variation.

On relating this experience to his lawyer, the lawyer commented, "No doubt you fired him." "No, I didn't," replied the plant owner, "I have made him the plant superintendent."

## Scientific Management—Its Scope and Significance

Lecture Delivered to the Society of Industrial and Cost Accountants  
Ottawa, Ont.

By C. JAMES GARDNER

Commodity Officer, Department of Trade and Commerce, Ottawa.

My object in this paper is to give a general idea of the scope and significance of organization and administration as a special field of study and practice. There are four reasons for choosing this topic.

First; from personal experience among managers and organizers in general I find an almost complete lack of knowledge of the elementary and fundamental factors. Secondly, my personal view (and I think it is shared by many) is that the so-called social sciences such as Economics, Psychology, Sociology, Political Science, to which the science of Administration is closely allied, have suffered extreme neglect as compared with the so-called pure or physical sciences such as Physics and Chemistry, and their many subsidiaries. Thirdly, I feel that this lack of balance is reflected in our educational and social system, and is a fundamental cause of the disharmonies of the present day when mankind and his works face, more than they ever did before, complete destruction by the Frankenstein of pure science which cannot be controlled because of the neglect of the social sciences. Fourthly, I emphasise the subject of Administration because, on one hand, it is the one social science that draws from all others, and thus if I can arouse a better appreciation of it I shall inevitably arouse a greater interest in the social sciences generally. On the other hand, Administration has already established itself as an ambassador in the realm of the physical sciences where men have found that without some semblance of it they will be destroyed by their own devices. So what better subject could form a bridge between the atomic bomb and social security,

Let us first glance at the difference between the social and physical sciences. There is a tendency to think of the social sciences not as sciences but as a mass of abstract notions, while the physical sciences are thought of as being clear-cut, concrete and unquestionable. To anyone who has studied the social sciences, it will be obvious that the same scientific method is employed in both fields. The difference is that in the physical sciences we deal with materials, whereas in the social sciences we deal with human beings.

We are familiar with scientific method—the process of observation, classification, generalization, verification and the ultimate evolution of laws or principles which make up the body of theory behind any particular field of science. Unfortunately we are not all familiar with the fact that both the social and the physical sciences use the same method. Our familiarity with the physical sciences is due largely to the fact that they are centuries older in their development and that they are given a greater

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predominance in our educational system than the social sciences, which are of comparatively recent development.

Let me illustrate: Economics is a social science. The father of the science is usually considered to be Adam Smith, who in his "Wealth of Nations" (1776) embodied principles which had been developed through observation, classification, and verification. True enough, the concepts have changed rapidly over the past hundred years, through further observation, classification and verification, and thus we have a revised statement of the science in the works of other economists, of whom Alfred Marshall and Lord Keynes are outstanding examples. But this shifting of original concepts is not only characteristic of the social sciences. There was a time when earth, air, fire and water were considered as the elements of physical science, and at a later date there was a time when the molecule was considered as the smallest indivisible particle of matter. This was revised at a later date to show that the atom was the smallest indivisible particle of matter; and now we all know that the atom is made up of protons and electrons, and that a neutron is a proton indissolubly wedded to an electron. So when the economist, in his short space of time, tells us that he has changed his original concept of the Labour Theory of Value to a theory based on Marginal Utility, we should not become impatient.

The significant thing to note is that although the social sciences affect us in our daily lives as much if not more than the physical sciences, we know far less about their fundamental principles. How many of us who know perfectly well the elements of the internal combustion engine, of electricity and of chemistry, know anything about the laws of supply and demand, the theoretical determination of commodity prices, rent and wages, the economics of perfect and imperfect competition, the principles of public finance and of the theory of production? How many of us know the elementary principles of Psychology, Sociology and Political Sciences? I venture to say, very few—and yet these are the backbone of our existence in a civilized society. To improve that society we must know more about them, so that we can voice intelligent and constructive views through our representative government.

If we remain ignorant, we shall be dependent on our political and industrial leaders, and we shall live in an autocracy, not a democracy. In such a case, our leaders, if they are interested in the establishment of a democratic community, and if they are intellectually capable and honest, and if they are fully conscious of their social responsibility, should be concerned primarily with improving the breadth, depth and balance of education. From your own experience in school or university, in business or in government, you should be able to decide where we stand at present. One thing is certain, we have a long way to go to improve our industrial, social and political relations before we can harness the works of our physical scientists for our future happiness and well-being. In what follows on the subject of Organization and Administration, I hope I can throw some light on the rocky road ahead of us.

First of all, let us be as clear as we can on what we mean by the science of Organization and Administration which, for convenience, may be called Management. It is a body of knowledge based on principles



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scientifically determined and verified. It is little more than a hundred years old, and succeeds a practice of organization and administration which was based largely on custom and convention. To make quite sure that we recognize the difference between the practice and the science, some people prefer to call the new body of knowledge "Scientific Organization and Administration" or "Scientific Management." Like all new developments it suffers from a great deal of manhandling which produces unpleasant distortions, and a deluge of third rate literature which is not fit to be read. It also acquires a wide variety of not very suitable names as "Management Engineering," etc. There is also a tendency to confine its application to business and industry: thus we get the names Business Administration and Organization, or Industrial Administration and Organization. The unfortunate result of this is that we tend to forget that the science applies wherever human beings are grouped together to accomplish a common purpose, and it applies not only to business and industry, but also to municipal, provincial, national and international government, to the church, the army, navy and air force, and to all other forms of co-operative effort, down to the quilting bee.

Sometimes the words Organization and Administration are used synonymously, but I prefer to make a distinction between them. By Organization, I refer to the structural framework within which a group works. It would include the Organization Chart, the definition of functions, and the delegation of authority, etc., which would be the first essentials in starting any form of co-operative effort. While this framework would have to be flexible over a period of time, it is comparatively static when compared with Administration, that dynamic aspect, usually called Management, which fundamentally provides for the continuity and effectiveness of the organization by exercising command, control, co-ordination and planning activities from day to day and week to week. In other words we could perhaps set up a perfect organization to-day for the production of machine tools, but the effectiveness of that organization, and the subsequent efficient output of machine tools over a period of time would be dependent on the effectiveness of the Administration.

### Highlights in the Development of Organization and Administration

The roots of Scientific Organization and Administration, like the roots of other social sciences, go back centuries, but we cannot trace them. Generally speaking, the great advances followed the Industrial Revolution of the 18th and 19th Centuries, when enormous technical advances brought men together in factories and industrial groups such as had never been known before. It was during these years that Adam Smith wrote the "Wealth of Nations" (1776), and in this and earlier writings on economics will be found threads of thought which were to be drawn together to form the early writings on Administration.

As I have pointed out, there is a mass of literature on the subject which is not worth reading. As a result, the best works tend to be concealed from the public eye, and the enquiring student may very often be completely misguided in his search for truth in nutshells. I should like—indeed I feel it almost a duty—to introduce you to several representative leaders in this special field of study.



## SCIENTIFIC MANAGEMENT

While Americans acclaim in Frederick Winslow Taylor (1856-1915) as the Father of Scientific Management, the English can go back 50 years earlier to the works of Charles Babbage (1792-1871), but there will be no dispute in the fact that while Babbage, a University professor at Cambridge, set out the scientific approach quite clearly, it was Taylor who not only expressed its principles, but who put them into practice and proved their worth.

Babbage (1792-1871), although professionally a mathematician, saw the necessity of a scientific approach to Management, as opposed to thinking in terms of tradition and custom. He was entirely objective, and in his analysis of the production of pins, took into account not only the time, labour cost and earnings of each separate operation but also extended his study to the functional analysis of supervisory staff where the mental operations were performed. Booksellers refused to handle his writings, because he exposed their excessive profits.

Taylor (1856-1915), started work as a machinist, studying the detailed performance of men and machines in the daytime, and the science of engineering in the evenings. In six years he had become Chief Engineer and had taken a Master's degree. His two employers, the Midvale Steel Works and the Bethlehem Steel Co.—before he became a consultant on his own account—gained much from his work on the art of cutting metals, in which he took into account machine speeds, angle of cutting tool, depth of cut, and a host of other elements making for technical efficiency; they also gained from his introduction of an effective piece work system. He gave freely of his time and patience to convince the workers of his goodwill, and to secure for them a fair proportion of the net gain. He spent much time and effort in educating Management up to its social responsibility. Taylor's methods were copied widely for the sake of profits alone, and while there was no labour unrest in any factory where he worked, it became widespread in those which had tried to capitalize on his systems. He was called before a Committee of Congress, and here he proclaimed his principles in a nutshell:

"Scientific Management involves a complete mental revolution on the part of the working man . . . and it involves an equally complete mental revolution on the part of those on the management's side—the foreman, the superintendent, the owner of the business, the Board of Directors . . . and without this complete mental revolution on both sides, scientific management does not exist. The great mental revolution is that both sides take their eyes off the division of the surplus as the all-important matter, and together turn their attention towards the increasing size of the surplus . . . Both sides must recognize as essential the substitution of exact scientific investigation and knowledge for the old individual judgment or opinion."

Henri Fayol (1841-1925) was a French mining engineer who rose to be the General Manager of a coal mining combine, and guided it from an almost complete collapse to prosperity. He was also an advisor to the French Government on military and post office reorganization. His pioneering work was entirely in the realm of organization and management at top levels, rather than at the manual labouring level, and he was the first to

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classify the functions of management into Organizing, Co-ordinating, Commanding, Controlling, and Planning. Having done this, he turned his attention to the methods of finding the necessary men and putting each one in the place where he could be of most service.

Mary Parker Follett (1865-1933) was an American philosopher and political scientist of international reputation. She was educated at Harvard and Cambridge, and took a special interest in social work in Boston, Mass. This led her to problems of vocational guidance and wage disputes, and these in turn brought her into close touch with industry.

Unlike Taylor and Fayol, she was not so much concerned with operations and functions, but with the psychological potentialities of human beings. She was interested in harnessing these potentialities for the benefit of the individual, and the group of individuals, whether in industry or in any other form of organization, and for the benefit of society at large. In this she emphasized a very important concept that is too often forgotten, namely, that the only justification for business or any other form of grouping, is that in addition to serving ALL its members, it should also serve society at large.

She concentrated on the scientific method of harnessing the differences among individuals to maximize their contribution within their sphere of responsibility and authority, and to build unity in the group effort, which led her to the conception of a General Manager as a specialized coordinator. She emphasized that dynamic administration should always provide for the individual advancement in authority and responsibility so that there should be no "final stage". Thus, by a completely different approach, she came to fundamental principles which were almost identical with those of Taylor and Fayol. As an outstanding political scientist, one aspect of her thought on this subject will be well worth noting carefully to-day, namely, that the principles of organization and administration are of universal application, and are as important if not more important, in Government than in industry.

B. Seeböhm Rowntree (1871-) was originally educated as a chemist. In the Rowntree chocolate and cocoa works, which not counting its subsidiaries, employs seven thousand people in Great Britain, he has built up and managed one of the greatest laboratories of scientific management ever known. Every aspect of organization and administration is put under the microscope in this factory, and, as a result, the owners, managers and workers are envied by their counterparts in other industries far and wide.

In his factory, Rowntree unflinchingly places maximum efficiency above all other considerations, because he knows that only in this can the workers be assured of security and happiness, and only in this can the company justify its social responsibility. If efficiency means unemployment, he will take efficiency first, and then proceed to consider the unemployed as management's next responsibility. To meet this emergency, he has set up unemployment insurance schemes to supplement State aid, educational facilities to train workers for other available jobs, social, health and psychology services for maintaining and building physique and morale, and he places the responsibility for re-employment squarely on the

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shoulders of his management and research staff. In some cases, new subsidiaries have been formed to create profitable re-employment.

His organization is an almost perfect democracy. All plant rules are made by a joint committee of management and workers. Throughout the plant there are full time shop stewards elected by the union and paid by the company. Below these is a network of shop stewards for the airing of grievances and the improving of efficiency. Foremen are appointed only after consultation with stewards. Management is regarded as a specialized function, and appointments are restricted to those who have been thoroughly trained. Promotions are on a strictly competitive basis. The operations of the company are open and above board, and through a network of councils every worker has an equal chance to bring any question before the management. A miniature court system is set up, with low and high courts, for hearing cases where disciplinary action is concerned, and impartial judges and juries and rights of appeal are provided for.

This experiment in industrial democracy is outstanding among other things for the responsibility it has placed on management. Rowntree says that when a man declares "My business cannot afford any more wages" he is shirking his responsibility. Workers must not suffer from the mental laziness of management, and Rowntree has provided the specialized training, and the checks and balances, to see that they do not suffer.

Outside his own business, Rowntree was equally active. In 1914 he was appointed Director of Industrial Welfare for the Ministry of Munitions, and his influence resulted in the creation of a permanent peace time department to carry on his work. He organized management conferences for business men, and they still continue to-day. He organized the Industrial Welfare Society for the care of juveniles in industry. It is supported by 1,000 member firms, and each year provides camping holidays for juveniles, and each year His Majesty the King honours the camp by a visit. Rowntree founded management research groups of non-competing industries, so that experience could be pooled and facts brought to light that would otherwise have remained unknown. Each year between 1921 and 1929, he visited the U.S.A. to keep in touch with latest developments.

Henry Lawrence Gantt (1861-1919), an American scientist and engineer, worked as an assistant to Taylor in both the Midvale Steel and the Bethlehem Steel Companies, and later became a consultant on his own account. He refused to work for any company unless he was given absolute assurance that no unfair advantage would be taken of his system, that is, in the exploitation of workers. He was not satisfied to let the matter rest there. He followed up his work by periodic visits to the plant at later dates. As a result, his assignments were limited to only fifty throughout his life, but in each one he did his work thoroughly and followed it up.

Although Gantt is best known for his graphic charts on cost control, idle machine hours, and the significance of time as opposed to quantity in planning and scheduling, his contribution was much wider. He supplemented Taylor's piece-rate system, which he felt was too severe on the less efficient worker, by a bonus system which gained much wider acceptance. From this he developed another bonus system for foremen who could upgrade the less efficient workers. He emphasized the idea of organ-

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izing so that each individual could have an equal opportunity to function at his highest possible capacity, and he always emphasized the idea of an industrial democracy. In this he almost parallels Mary Parker Follett and Seeböhm Rowntree.

Walter Rathenau (1867-1922) was a German Jew educated in Mathematics and science, and an author of world-wide distinction in the development of electro-chemistry. At the age of 42 he was associated with over 80 firms and was one of 300 men who, it has been stated, controlled the economic destiny of Europe. He achieved this in spite of the opposition of much less liberal industrialists and politicians, in whom he saw the ignorance and inefficiency that would bring Germany to ruin. Because he himself was an industrialist, he was also opposed by the more radical democrats.

In the face of such odds, his ability was such that, with the outbreak of war in 1914, he was Germany's only hope as an organizer of raw material supply, and in nine months of conflict with private vested interests in industry and the public service he was able to withdraw and leave an efficiently organized system of materials production and control. In the post-war years, still in the face of opposition, he was the only logical choice for leadership in reconstruction and re-establishment of foreign relations, and he was appointed as Minister of Reconstruction, and later as Foreign Minister. Before he had completed his work, he was assassinated in 1922 by the extreme nationalists.

Rathenau's contribution to scientific management was not in looking from the job to the worker and hence to the management functions, like that of Taylor, Gantt and Fayol, nor was it in examining the human factor from the point of view of psychology, like that of Mary Parker Follett. Although it must be said that he recognized the significance of these elements and also the industrial democracy of Rowntree, as is illustrated in his establishment of self-governing corporations in the coal and potash industries. But mainly, he brought the economist's analytical approach to the operations of industry, and he saw that only through scientific management could free enterprise find its true expression. As a result he wielded a double-headed weapon against inefficiency. He not only advocated scientific management, but at the same time attacked private monopolies and monopoly practices, inequality of opportunity, and class barriers in private and government service, which all impeded the hope of industrial democracy and the maximization of wealth.

Henry S. Dennison (1877-) is the Seeböhm Rowntree of America, and, incidentally, they have been lifelong friends. You are all familiar with the Dennison paper products, and will need no introduction on that score. The Dennison organization is not so well known, but to give the details would be a repetition of what has already been said about Rowntree. The accomplishment will be adequately illustrated in the fact that long before the American New Deal, Dennison had worked out plans to maintain wages and employment in his own plant. He has pioneered in market research and analysis and in merchandising methods.

Like Rowntree, he has given freely of his services to his country and to the cause of scientific management. He has served three, probably four, Presidents—Wilson, Hoover, Roosevelt and Truman, in industrial con-

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ferences, unemployment conferences, post office management, and the planning of national resources. He followed Rowntree's lead in establishing Management Research groups in industry. He has been prominent in the 20th Century Fund organization for economic research, and in the establishment of the International Management Institute at Geneva.

Frank Bunker Gilbreth (1868-1924) was another American who, although he had the chance of higher education, preferred to start at the bottom of the ladder. He started work as a bricklayer's apprentice and in ten years became Chief Superintendent of a construction company. At the age of 37 he owned his own contracting business which operated in every state in the union. Later he withdrew from industry to become a full time consultant with offices in New York and London.

Gilbreth's contribution was in the detailed analysis of physical movements and the environment in which the worker operated. He aimed at eliminating every avoidable effort, and every restrictive factor in environment, so that mental and physical fatigue would be reduced to the minimum. In this work he was ably assisted by his wife who was a teacher and psychologist. His life quest was to find the "one best way to do the job". He did not close his eyes, as some have done who have tried to copy his methods, to the deadening monotony of repetitive motions, but sought to compensate them, and always emphasized the general welfare and equality of opportunity for progress of each worker in the living organism which is called industry.

Edward Tregaskis Elbourne (1875-1931) was another Englishman and Engineer who dropped his studies in the physical sciences because of his conviction that scientific management was of much more vital importance. His contribution, apart from setting out the fundamental principles clearly in his writings, was that he broke down much of the prejudice that had been engendered in conservative British institutions by the labour disturbances which resulted from the so-called "efficiency expert" who gave a distorted view of the science to America. Largely through his efforts, a professional body called the Institute of Industrial Administration was formed, the famous Regent St. Polytechnic instituted a special course in the subject, the subject was made compulsory for membership in the Institute of Mechanical Engineers, (which, by the way, had almost insulted Taylor when he had visited England a few years earlier), the Department of Business Administration was set up in the London School of Economics, and an Industrial Staff College was organized at Loughborough in Leicester.

That is the story of ten leaders; eleven including Gilbreth's wife. Six were Americans, three English, one French and one German. Three were mechanical engineers, one a mining engineer, two chemical engineers, one political scientist, one building contractor and one psychologist. All of them were outstanding successes in their own fields, as well as in scientific management. All of them approached the subject in a different way, and under very different circumstances, and yet all of them came to similar conclusions on the fundamental principles of scientific management.

In some cases their contribution to technical efficiency was outstanding but the significant thing is that in all cases their major contribution was to social and economic efficiency. It is important that we should

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recognize the difference between these two, and I can illustrate it by an example. Suppose our technicians could invent a machine into which we could put the hide of a cow, and from which we could draw finished boots and shoes. It might be a good thing as far as the supply of boots and shoes is concerned, and it could be technically perfect, but it would not be a good thing if the machinery was so complicated that to produce it we would have to use resources which could be better employed in producing our requirements of other clothing and food. It would be economically inefficient and, therefore, socially undesirable. And as you know, it would not pay to have a cost accounting system if the net gain did not outweigh the cost of installation and operation of the system. That consideration is usually called the "cost of cost accounting."

Summing up, their contribution is in the development of a scientific method for application to a composite problem—that of living together in health, wealth, and security. They take all that can be offered by the physical sciences and techniques, and then proceed to break down all our group activities into infinitesimally small parts, each of which is put under the microscope for examination and record of its worth in terms of all other fields of scientific study. In terms of Psychology and Physiology they examine our mental and physical motions and reactions, so that the maximum individual effort can be expended with the minimum of hardship. In terms of economics they examine the effective use of our scarce resources for the accomplishment of our ends, which under freedom of enterprise must be the maximization of welfare at minimum cost. In terms of Political Science, they examine the effectiveness of the structure of our co-operative effort for the greatest expression of individual freedom conducive to the benefit of society at large. They have created a formula for the harmonious progress of the individual and society. They have welded into the fabric of our social life a link between technical and social progress.

What chance have we, their beneficiaries, of preserving and strengthening the link? With the atomic bomb on our doorstep and a bill for millions of dollars in our letterbox, we do not need to worry too much about the development of the physical sciences. They can evidently find a sympathetic ear in other places. And it is only through the science of Economics that we shall teach people that the economic welfare of one group is not necessarily the economic welfare of the whole, and that trade or professional protection in a competitive world creates more hardship than it alleviates. And as has been shown, we can only maximise our gain from the social and physical sciences if we have more application of the science of organization and administration, not only in industry, but in government, and at every stage where co-operative efforts is required.

President Roosevelt recognized this need in no uncertain terms when, in 1937, he presented to Congress the report of his special committee on "Administrative Management of Government Affairs," the first committee of its kind ever to be appointed in all history. These are his words:

"Will it be said, 'Democracy was a great dream, but it could not do the job?' Or shall we here and now, without further delay, make it our business to see that our American democracy is made efficient, so that it will do the job that is required of it by the events of our time? . . ."

## « STUDENT SECTION »

### COST ACCOUNTING

Comments by A. VAN HARRIS, C.A.

The Chapman Corporation have had a Cost System installed for a little more than a year. The Directors are not entirely satisfied with the results and feel that they are not receiving all the benefits which the system should give.

You are asked to make a survey of the system in order to determine whether it entirely meets the needs of the business, whether it is being efficiently operated, and whether the Directors are making full use of the data which is or may be made available.

Write a report to the Directors, discussing generally the short-comings in the system, its operation and its use.

### COMMENTS AND SOLUTION

This problem was assigned recently to a group of students who were completing their course in Advanced Cost Accounting. As will be observed the problem demands little direct knowledge of debits and credits, but it becomes apparent that a satisfactory discussion of the problem demands a good knowledge of accounting, and accounting systems.

Actually the problem was assigned with four main objectives:

(1) To ascertain if the student could set up a reply in report form, and particularly a report which would be useful to the Directors.

(2) To allow the student scope to review a cost system, and develop situations which would have led to the Directors' complaints.

(3) To find if the student could present his arguments in a logical manner, or at least in some order, and that he could deduce from these arguments the conclusions and recommendations which should conclude the report.

(4) To check the student's use of language, sentence construction, use of headings, etc.

The writer considers this problem to be legitimate material for examination in a course in cost accounting. The Cost Accountant does many things besides keep his ledgers, and prepare statistical reports, and a written report should be well within his capabilities.

Solutions which were examined in answer to the above problem had quite a variety of deficiencies but among the serious ones were the following:

(1) The tenor of the reports was too general. The examiner, (and I suspect a director as well) was left with the feeling that only a superficial examination had been made of the accounting system, and in particular of such items as raw material returns, spoiled or defective work, and scrap. Little, if any, attention had been given to labour accounting, or to the distribution of overhead expenses. As was pointed out to the group later, it takes considerable writing practice to leave the correct impression behind one, and the student had to balance on the one hand a general statement of operation of a cost system, without going into details which would be of



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no interest to the Directors, and on the other hand supplying sufficient detail to convince the Directors that the student knew what was happening to the accounting. Of approximately 30 reports which were examined, only two were considered to have handled this item satisfactorily.

(2) The writer was surprised to note that only a few students attempted to construct their report to be an answer to the Directors' complaints. Many ignored the fact that the Directors had complained at all. It was thought that considerable attention would be devoted to their complaints, as that was the prime reason for the report—and the student who did not attempt to answer the specific points raised by the directors was not being a realist. The Directors expect an answer to their questions "or else," and in actual practice he will get it, and Mr. Cost Accountant will be certain that his report gives the answer, provided he is interested in showing his personal value to the management.

(3) The students were careless about sentence construction, and their language was not exact. These points are cleared up with more practice in report writing, but most students are able to see faulty grammar if they would reread their own compositions. The difficulty of overcoming misuse of terminology, of writing something which does not leave the reader with the idea which the writer intended to convey, of requiring several sentences to say what could be as effectively stated in one, all of these take time and effort for most accountants, because it is not one of their natural gifts.

Having listed some of the complaints of the examiners, (and writer) one more paragraph should be forthcoming in which the students who wrote these reports, (which are the basis for this commentary) are to be congratulated on the material which they used to support their stories on the incorrect functioning of the cost accounting system. Their "situations" obviously had been drawn in a great many cases, from actual practice in which there had been improper functioning of the accounting system;

In brief outline the solution to this problem should conform with the following:

(1) The report should be properly addressed, signed, and dated.

(2) The report should commence with a brief introduction of the subject, and purpose of the report.

(3) The report should contain reference, probably item for item to each complaint of the directors—dealing either fully with each at the time, or discussing the complaints, and later the details.

(4) The report should cover the material, labour and overhead expense accounting in such detail as will show the management that the writer is fully conversant with the system. While a detailed description of all counting is unnecessary, something should be said about each section even if it is only to assure the directors that this section is functioning as planned.

(5) There is sufficient generality in the problem to allow the report to deal with other topics than the manufacturing accounts. Such matters as sales and returns, statements, or lack of statements could be included as part of the discussion.

(6) The report should be summarized for any conclusions or recommendations which result from development of the discussion.



